

Flight Scientist Report
Friday 09/11/2020 ACTIVATE RF33

Flight Type: Statistical Survey Flight–ZIBUT to southwest point
Flight Route: KLF1 ATLC ZIBUT 36.68/-71.22 36.2667/-71.333 35.7731/-71.4687 34.69/-71.78 ZIBUT ATLC KLF1

Special Notes:

Planning for an ASTER underflight to get the desired conditions of no cirrus and broken clouds to be able to study cloud morphology.

After some headaches initially with ATC, both planes lined up perfectly for the ASTER underflight part of the flight.

Forecast showed possible dust plume but aircraft data initially didn't reveal clear signature of it.

Was generally clean aerosol day; sulfate was more abundant than organic although overall levels were low.

King Air

Got to the beginning point of the ASTER leg a bit early so did two 10-nautical mile legs to kill time and to get data

Had a 'TKS (?)' failure that affects laser and dropsonde operations; needs to be resolved before next flight

Dropped 6 sondes

Falcon

INS (inertial navigation system) failure on yesterday's flight and unable to fix it overnight. But could fly without it today. A sequence of events led to overheating in cockpit which led to one box failing, which led to a delay in takeoff. UC-12 went anyways as the priority was the ASTER underflight for the UC-12 nadir camera images.

We had to transit out much longer than normal because of ATC clearance issues (Giantkiller and New York Center issues all the way to ZIBUT). Likewise on the way home we got ordered up to 6000 ft which was of limited use for science.

Conditions on the ASTER track were ok, but approaching the track we were working around deep convection and cloud scene was very messy. Likewise on the way back, near ZIBUT, we had convection around us that made cloud levels hard to determine.

Reported mostly sulfate and no org

Nd was around 100-200 along the ASTER leg

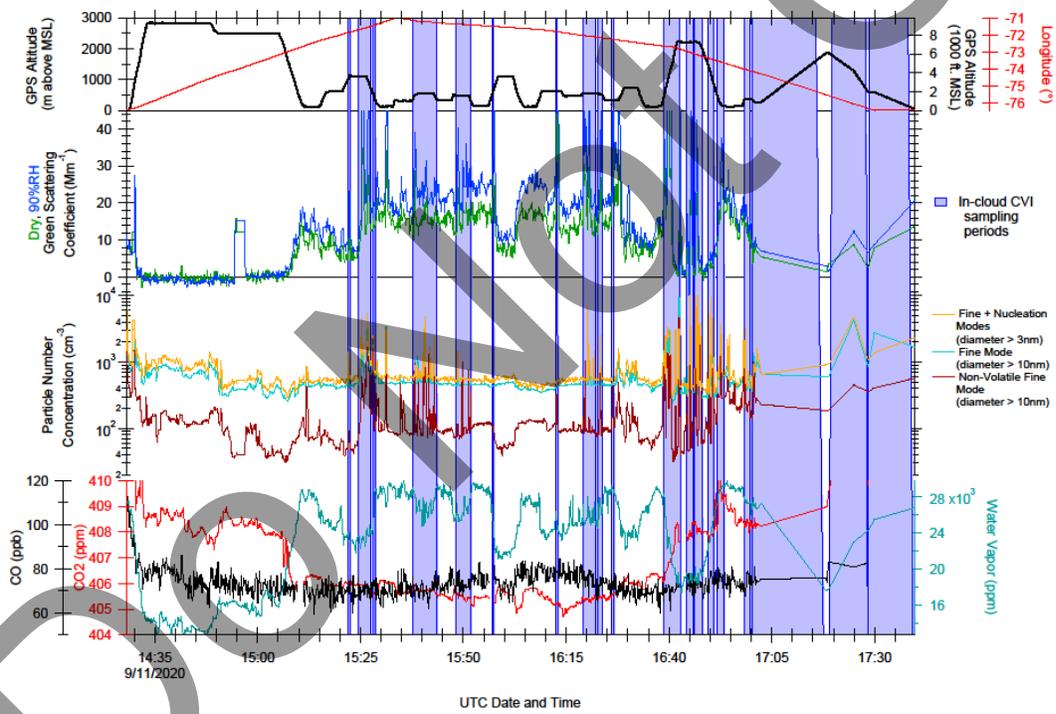
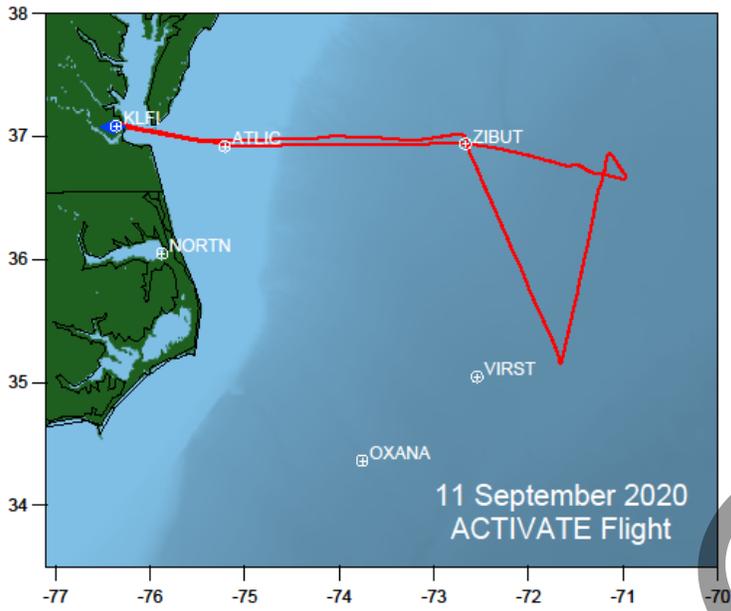
Cabin temperature a bigger problem today since Falcon was high up without APU due to ATC issues.

Collected cloud water and rain water

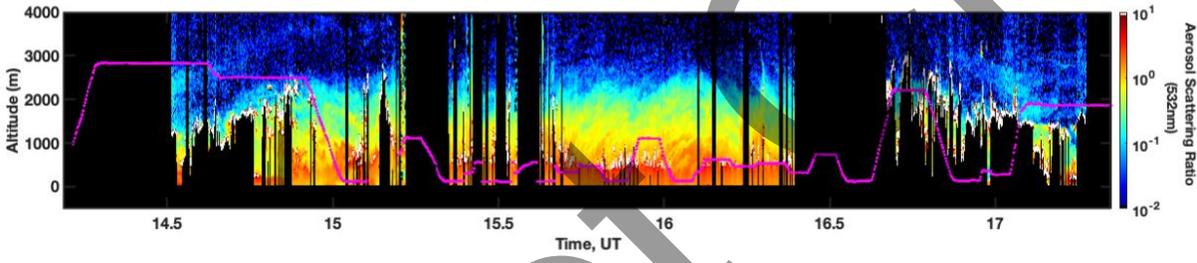
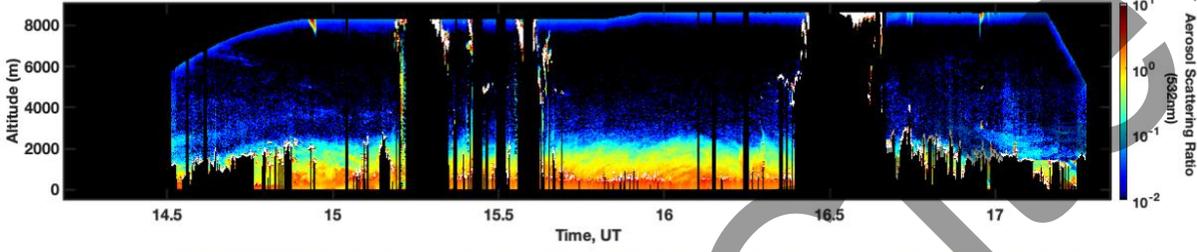
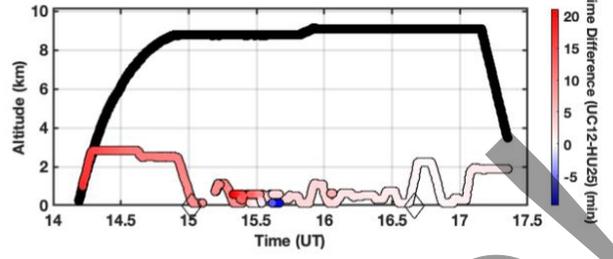
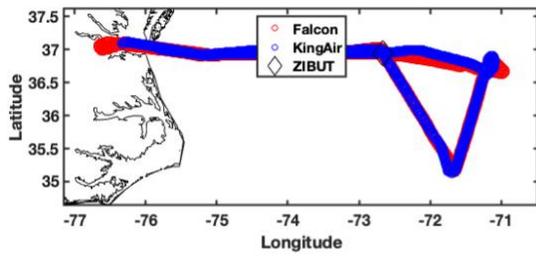
Advice from pilots: always use degrees, minutes, decimal minutes for waypoints; degrees and minutes is fine though if don't need too much accuracy

Do Not Cite!

Rich Moore Quicklook Images:



20200911 - ACTIVATE - KingAir and Falcon flight tracks

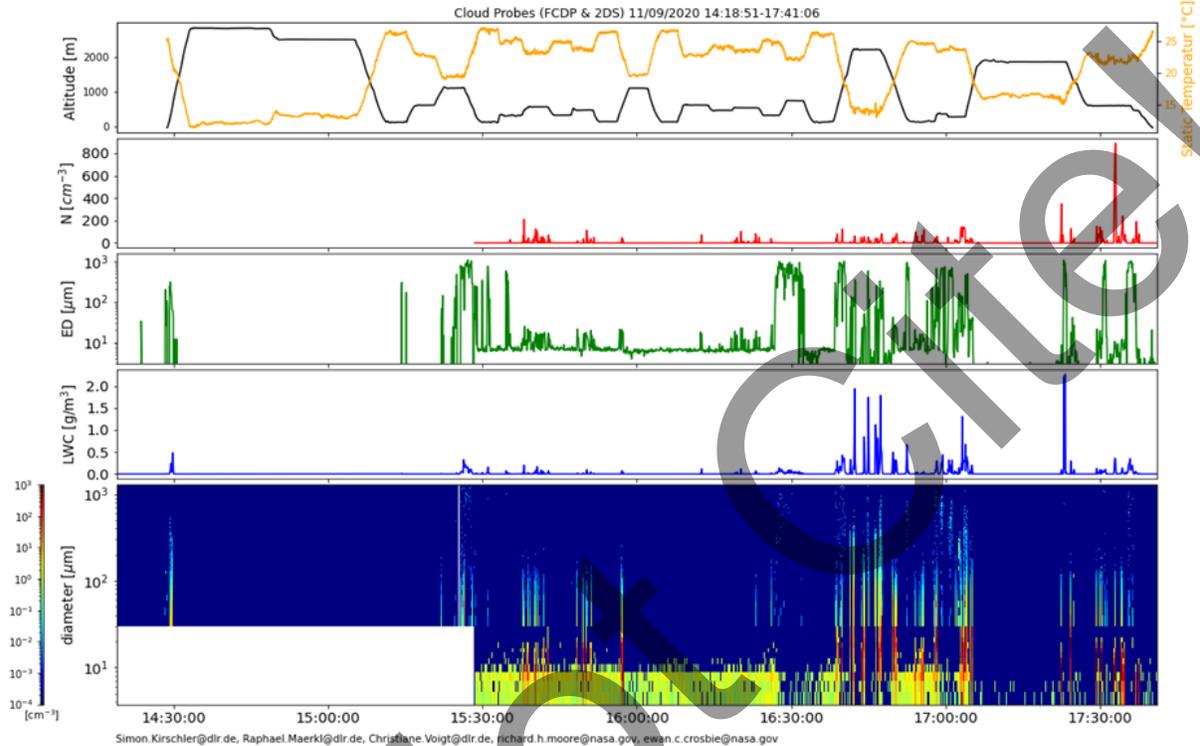


Do Not

Quicklook ACTIVATE Cloud Probes (FCDP & 2DS)

preliminary data, only for quicklook use

Simon Kirschler, Raphael Märkl, Christiane Voigt, Richard Moore, Ewan Crosbie

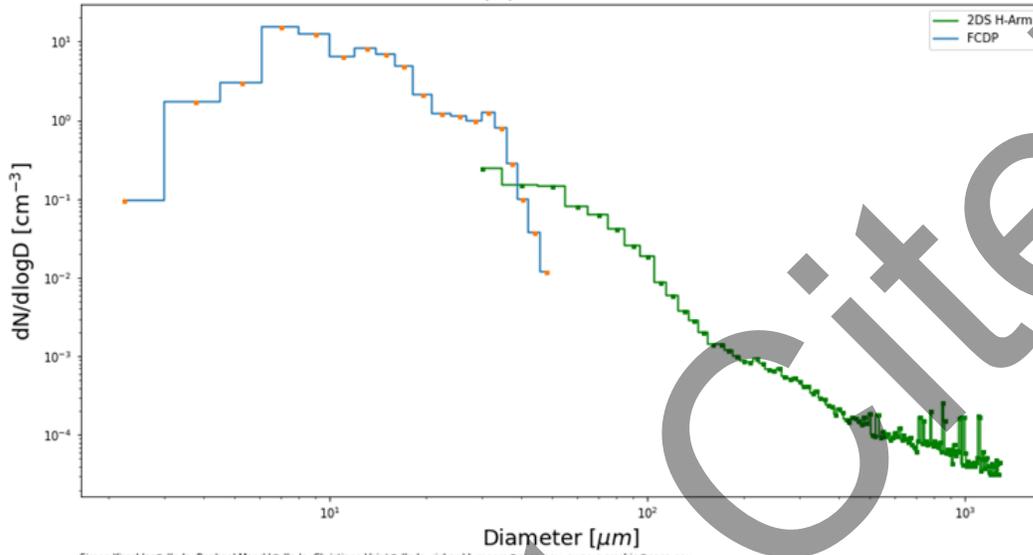


PSD ACTIVATE

preliminary data, only for quicklook use
Simon Kirschler, Raphael Märki, Christiane Voigt, Richard Moore, Ewan Crosbie



PSD 11/09/2020 14:18:51-17:41:06

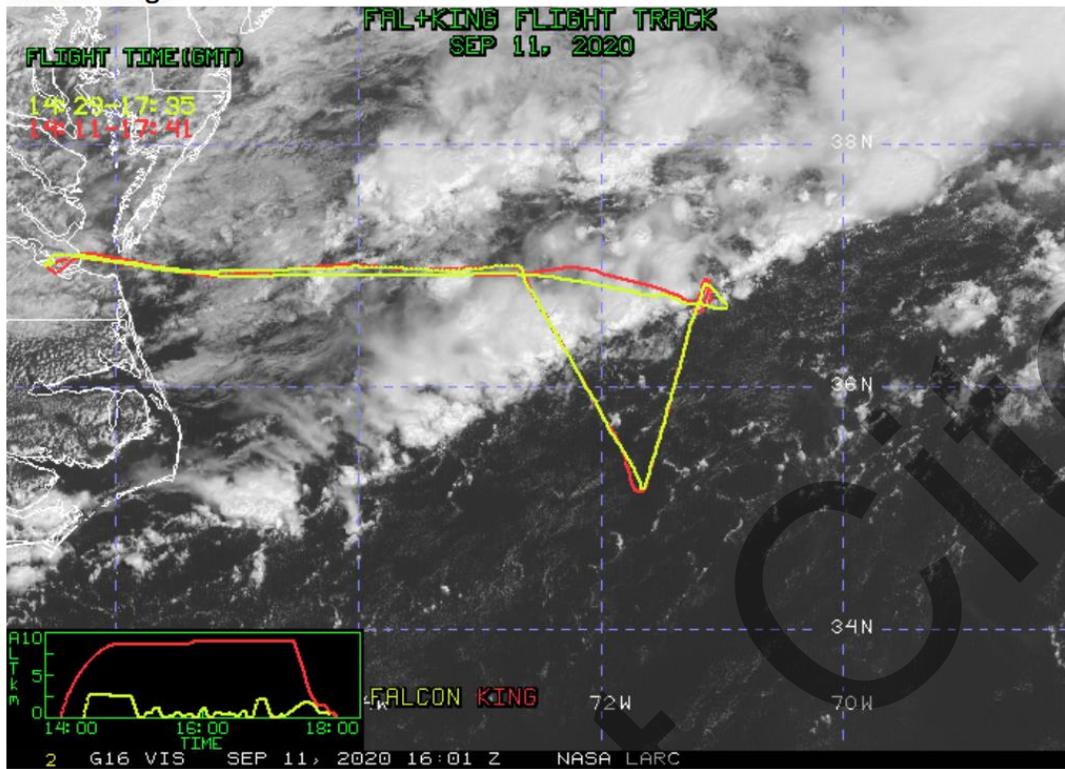


15:27

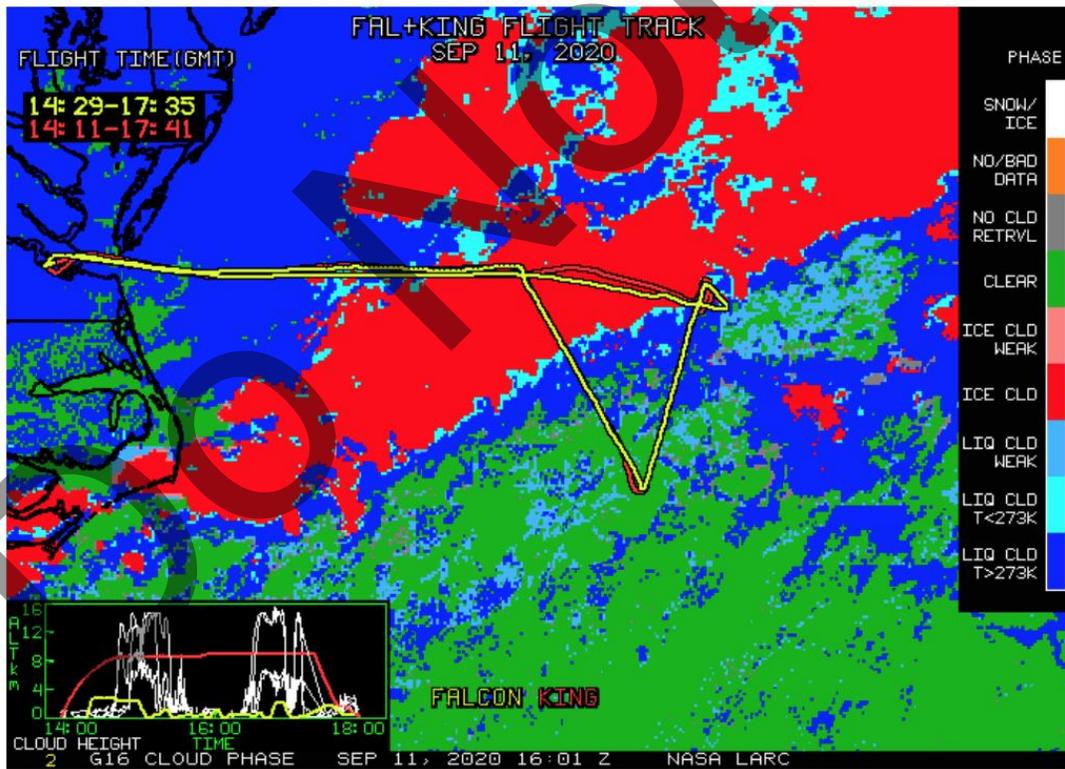


NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 33, 1601 UTC Sep 11, 2020

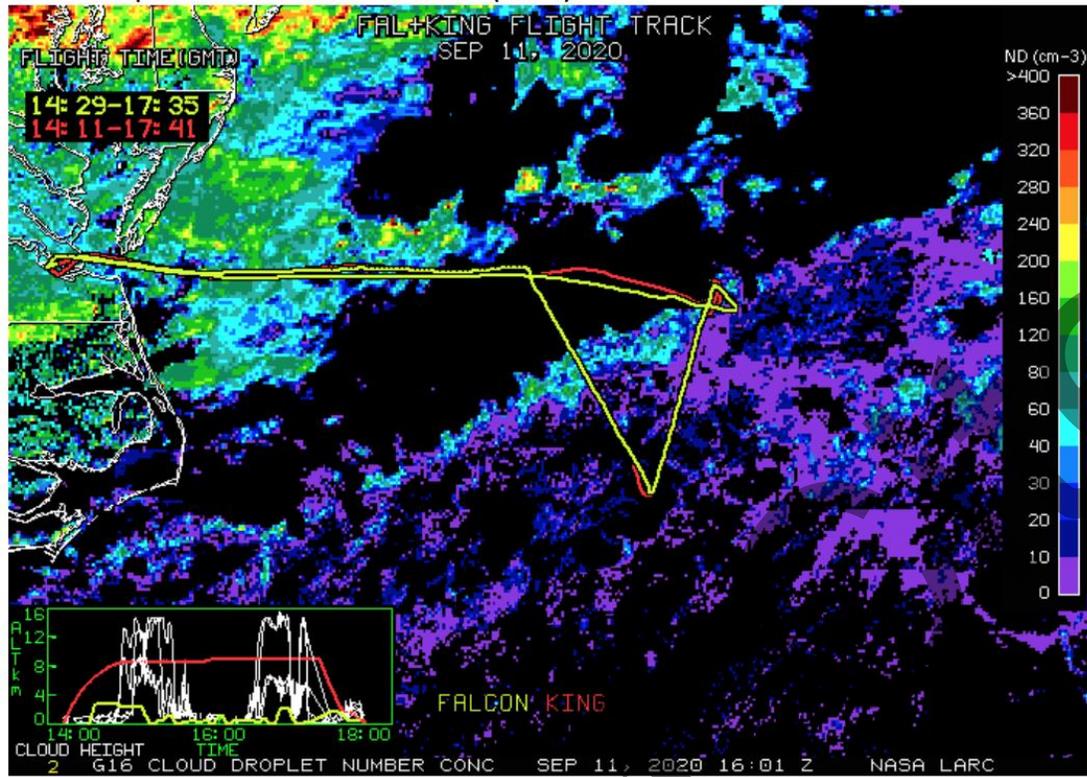
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

